

# PATENT ABSTRACTS OF JAPAN

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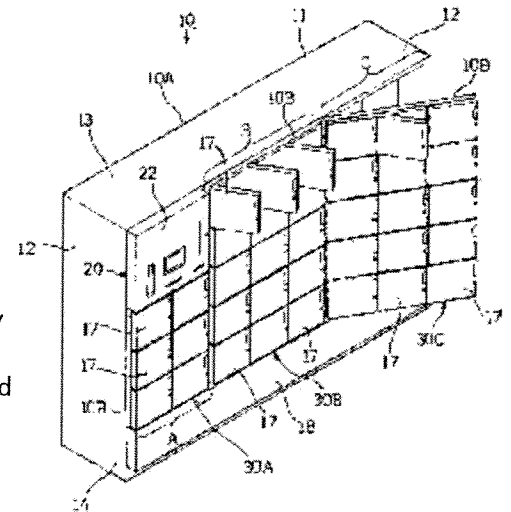
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## (54) UNMANNED RECEIVING BOX

### (57)Abstract:

**PROBLEM TO BE SOLVED:** To save labor and time required in collection and delivery work by goods distributors whose work contents are to open individual doors respectively in each storage room of unmanned receiving boxes and to collect goods or to open the individual doors for individual storage room ordered by the users of the unmanned receiving boxes and to deliver the goods or the like.

**SOLUTION:** Individual doors 17... of a number of storage rooms are attached to storage rooms through door frames 10B, 10B... common to storage rooms belong to group A, group B, group C, for example, by a plurality of individual doors 17... attached to the door frames 10B, 10B, collection and delivery doors 30A, 30B, 30C opening and closing a plurality of the storage rooms at the same time which belong to a group corresponding to each door frame 10B can be formed to the collection and delivery doors which open and close at the same time a plurality of storage rooms belonging to a group corresponding to each door frame 10B.



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CLAIMS

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[Claim(s)]

[Claim 1]An inside of a cabinet is equipped with a control room which stores an electronic control, and two or more storage rooms which store an article, In an unmanned receipt box which carries out unlocking operation via an electronic control which provides an individual door with an electronic lock in two or more storage rooms of each, and stores an electronic lock of a door according to each to a control room, Two or more individual doors which attached an individual door to a storage room via a door frame common to a group of two or more storage rooms, and were attached to a door frame and a door frame, An unmanned receipt box, wherein it forms a collection-and-delivery door which opens and closes two or more storage rooms belonging to a group corresponding to a door frame simultaneously and a collection-and-delivery door is provided with an electronic lock which carries out unlocking operation from a manual lock or an electronic control.

[Claim 2]The unmanned receipt box according to claim 1 building in a cooler style which carries out temperature control of the group of each storage room which has said individual door, and a storage room which has said collection-and-delivery door via said electronic control.

[Claim 3]The unmanned receipt box according to claim 1 or 2, wherein said electronic control is provided with an external connection port which outputs and inputs electronic intelligence and carries out remote control via an information-and-telecommunications means.

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## DETAILED DESCRIPTION

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[Detailed Description of the Invention]

[0001]

[Field of the Invention]In goods dealings of the forms that article delivery traders, such as a delivery dealer and a letter carrier, mediate between the buyer of goods, and sellers in this invention, It is related with improvement of the unmanned receipt box used in order to give facilities to both the buyer of goods, and a seller by making storage possible temporarily until a buyer takes over the goods addressed and sent to the buyer.

[0002]

[Description of the Prior Art]Like an Internet sale, TV shopping, and catalog sales, an article delivery trader intervenes between the buyer of goods, and a seller with diversification of a sell-commodities gestalt, the opportunity for goods to be sent to the buyer side via an article delivery trader increases, and use of parcel delivery service is increasing quickly. And if the buyer is absent, in this case an article delivery trader, goods -- not bringing home -- it does not obtain and the inconvenience that absence cannot charge a commodity price except that it must pay a risk of producing the seller of goods in the meantime while the buyer of \*\* cannot receive goods easily arises.

[0003]The function which an unmanned receipt box spreads as the goods keeping-for-a-time device for canceling such inconvenience or an uninhabited goods receipt device, and an unmanned receipt box has is closely connected with the merchandise sales system between absentees. Therefore, an unmanned receipt box is used also for the use which ships an article other than the use which receives an article via an article delivery trader via an article delivery trader.

[0004]The inner space of a cabinet is divided to many storage rooms for storing a control room and an article, and, as for the conventional unmanned receipt box based on such a use, an individual door provided with an electronic lock is provided in each storage room. The electronic control for a buyer and an article delivery trader pinpointing the storage room to be used, or carrying out unlocking operation of the electronic lock of the individual door of the storage room is stored in the control room. In the unmanned receipt box which has a cold insulation function, what the machinery room which stores a cooler style is naturally secured is being developed in the inner space of a cabinet.

[0005]An electronic control contains CPU and has a temperature control function in the unmanned receipt box which has a cold insulation function besides the input . output function of information, a user's identifying function, the locking unlocking function of the electronic lock of each storage room, the impressing function to a delivery ticket, and a using history recording function. When an electronic control has an external connection port and can connect with information-and-telecommunications circuits, such as an analog telephone line and ISDN, via the electric matching means of a modem, DSU, a terminal adopter, etc., etc., it also has a remote control function and a remote manager.

[0006]In what it is common to be carried out by [ both sides or either one of ] an ID card or a password as for the unlocking operation of the electronic lock of each storage room by a user, and is installed in an apartment etc., a room number may be used together for a user's discernment. From the consideration on crime prevention, the electronic lock of each storage room is locked, also when it is a vacant room.

[0007]The following usage patterns will be expected from the unmanned receipt box in the future. Namely, the buyer who specified goods with the commodity catalog, The vendor who placed an order with a telephone, a facsimile, a personal computer, etc., and received the order requests the method of dispatch of goods from manufacturers all over the country to the vendor who planned catalog sales depending on the specific supermarket which is carrying out the operating selling agreement, and goods. The contractor who received the dispatch request of goods addresses goods to a buyer, and ship by parcel delivery service etc. The shipped goods are carried by the article delivery trader in the unmanned receipt box which a buyer uses via several direct or loads

relay point, and are stored in a storage room with the predetermined operation method for contractors. A buyer gets to know arrival of the goods ordered by the arrival-of-goods display of a lamp or a display which notifies of arrival of goods, opens an individual door with a predetermined operation method, and receives goods. these -- an information center -- concentrated control -- central control is carried out and bidirection is maintained.

[0008]

[Problem(s) to be Solved by the Invention]while such a conventional unmanned receipt box was convenient for the user of the buyer and seller side, it was alike and it was set, and there was a problem that there was a burden on the delivery and collection service of the delivered commodity by the article delivery trader who mediates the meantime, or a dispatch load in fault size.

[0009]While this problem is excellent in the safety on crime prevention, it is caused by the correlation of the demerit of the electronic lock that unlocking operation takes time, and the system of delivery of the goods by an article delivery trader, etc. That is, the goods of being shipped for every order from a supermarket or a manufacturer for which the buyer placed an order are rare, and are usually shipped with the dispatch cycle for every fixed time according to the agreement between article delivery traders. When goods were delivered via a load relay point from a remote place, the load which carries out waiting for time and is delivered in the same direction was packed, and also it is delivered at a stretch using the flight of the direction going. As a result, even if it is a case where goods are ordered from the time from which two or more users of an unmanned receipt box differ, about the delivery stage of goods, an article delivery trader will deliver the goods for two or more addressee simultaneously in many cases.

[0010]however, \*\*\*\*\*, if sealing operation of a delivery ticket etc. are not repeated, whenever an article delivery trader faces storing an ordered commodity in an unmanned receipt box, repeats the same unlocking operation repeatedly, and opens the individual door of a storage room one by one and it stores goods. And since the specific operation of the storage room to be used is added when a user with a specific unmanned receipt box and a specific storage room are cooperative use type things not corresponding by 1 to 1, the complicatedness on use becomes much more remarkable. Also in the collection-of-cargo work of the load shipped via an unmanned receipt box, such a complicated situation has the same user.

[0011]Then, an object of this invention is for it to to be not only convenient for the user of an unmanned receipt box, but to provide the convenient unmanned receipt box which can complete delivery and collection service and collection-of-cargo business easily [ in a short time ] also for an article delivery trader.

[0012]

[Means for Solving the Problem]Inside a cabinet this invention to such a technical problem at least, In an unmanned receipt box as has a control room which stores an electronic control, and two or more storage rooms which store an article, provides an individual door with an electronic lock in each storage room and comes to carry out unlocking operation of the electronic lock of a door according to each via an electronic control of a control room, Two or more individual doors which attached an individual door to a storage room via a door frame common to a group of two or more storage rooms, and were attached to a door frame and a door frame, A collection-and-delivery door which opens and closes two or more storage rooms belonging to a group corresponding to a door frame simultaneously is formed, and a collection-and-delivery door is provided with an electronic lock which carries out unlocking operation from a manual lock or an electronic control.

[0013]A collection-and-delivery door consists of an individual door of two or more storage rooms which make a group, and a door frame which has attached that individual door in this unmanned receipt box. therefore, a group corresponding to a door frame by opening and closing a collection-and-delivery door as well as opening and closing each storage room individually by an individual door -- a storage room can be opened and closed simultaneously.

[0014]The unmanned receipt box according to claim 2 contains a cooler style which carries out temperature control of the group of each storage room which has said individual door, and a storage room which has said collection-and-delivery door via said electronic control.

[0015]Since internal temperature of an unmanned receipt box is low maintainable by a cooler style, an article which requires low-temperature storage of perishables etc. is acceptable. Temperature in that case can be moderately set up and managed with an electronic control. And since temperature control can be carried out [ a group of a storage room which has a collection-and-delivery door, or ], every group of a required storage room can maintain internal temperature low.

[0016]An electronic control in an unmanned receipt box can be provided with an external connection port which outputs and inputs electronic intelligence, and can carry out remote control via an information-and-telecommunications means.

[0017]In a case where two or more unmanned receipt boxes are installed by carrying out remote control of the unmanned receipt box, Since an electronic control of each unmanned receipt box can be used as a remote electronic control and these can be controlled from one master electronic control, concentrated control of two or more unmanned receipt boxes and central control become possible.

[0018]

[Embodiment of the Invention]Hereafter, an embodiment of the invention is described, quoting a drawing.

[0019](A 1st embodiment) The unmanned receipt boxes 10 of this embodiment are the control room R0 and many storage rooms R1 in the cabinet 10A, as shown in drawing 1 and drawing 2. -- It has R36 and the machinery room R37. The cabinets 10A are sheet-metal-work products made from metallic thin plates, such as a rustproof steel plate and a stainless steel plate. The outside of the cabinet 10A is constituted by the 5th page with the top-plate panel 11 which forms a top panel, the side panels 12 and 12 of the couple which forms the side on either side, the back panel 13 which forms the back, and the bottom panel 14 which forms the bottom, The base frame 15 for maintaining an opening between the bottom panel 14 and an installation surface is attached to the bottom panel 14.

[0020]The inside of the cabinet 10A with horizontal diaphragm 16a-- arranged so that the fixed line width D1 and the column width D2 may be maintained and a lattice may be constructed by vertical diaphragm 16b-- . Storage room R1 of 36 rooms which it was divided by six lines about the sliding direction, was divided by eight rows about the longitudinal direction, and carried out mutually-independent -- R36 is formed (drawing 1). However, the control room R0 occupies 2 column-width 2 line width in the position at the upper left of the cabinet 10A, and is established in it, and three divisions are assigned to the machinery room R37 so that total column width may be occupied with one line width in a lowermost row position.

[0021]Many storage rooms [ -- It is roughly classified into R36. ] R1 -- Storage room R1 of A group where R36 occupies two rows of three lines from left-hand side -- Storage room R7 of R6 and B group which occupies three rows of five lines -- Storage room R22 of C group which occupies three rows of five lines as well as R21 The electronic control 20 which equips the control room R0 with the navigational panel 22 is stored, and a cooler style is stored by the machinery room R37. And storage room R1 of A group, B group, and C group -- R6, R7 -- R21, R22 -- The individual door 17 and 17 -- are attached to R36 via the independent door frames 10B, 10B, and 10B corresponding to the group, respectively, and the door 18 for exclusive use is attached to the machinery room R37 (drawing 1, drawing 2). Therefore, the front face of the cabinet 10A will be constituted by the aggregate with the door 18 of the machinery room R37 with the navigational panel 22 of the electronic control 20, and many individual doors 17 and 17 --.

[0022]Each of door frames 10B of A group, B group, and C group and 10B-- is the \*\*\*\* objects of the shape of a lattice which becomes horizontal frame 16A-- from stud 16B-- , and they are assembled so that it may have the line width D1 and the column width D2 of each storage room R1 -- which are in agreement with the line width D1 and the column width D2 (drawing 1). The door frames 10B and 10B of B group and C group receive the cabinet 10A, It is attached by the large-sized hinge H2 infixed between the vertical diaphragms 16b and 16b and the studs 16B and 16B on the left-hand side of the door frames 10B and 10B which are located in the left end of B group, and the left end of C group, respectively, and H2 so that the right difference is possible (drawing 3). To the door frame 10B, in the state corresponding to each storage room R1 -- , the door 17 according to each is attached by the small hinge H1 infixed between the left end of the individual door 17, and the stud 16B of the door frame 10B so that the right difference is possible. the hinge H1 and H2 -- the door 17 according to each -- each door frame 10B per plurality use is carried out. Such how to attach the door frame 10B and the individual door 17 is the same also about how to attach the door frame 10B of A group which is not illustrated, and the individual door 17. The fitting member of the door frame 10B of A group becomes the side panel 12 on the left-hand side of the cabinet 10A (drawing 1).

[0023]As a result, storage room R1 of A group -- the door frame 10B corresponding to R6 and six individual door 17 -- attached to it, The storage room R1 belonging to A group -- the collection-and-delivery door 30A which opens and closes R6 at once is formed -- The storage room R7 of B group -- the door frame 10B corresponding to R21 and 15 individual door 17 -- attached to it, The storage room R7 belonging to B group -- the collection-and-delivery door 30B which opens and closes R21 at once is formed -- further -- The storage room R22 of C group -- with the door frame 10B corresponding to R36. Storage room R22 which belongs to C group with 15 individual door 17 -- attached to it -- The collection-and-delivery door 30C which opens and closes R36 at once will be formed (drawing 2).

[0024]The door 17 according to each of each group is locked by the electronic lock K1 which carries out unlocking operation with the electronic control 20 (drawing 3), and the collection-and-delivery doors 30A, 30B, and 30C

corresponding to storage room R1 -- of each group are locked by the electronic lock K2 which carries out unlocking operation with the electronic control 20. The electronic lock K1 adopted here and K2 are what uses the electromagnetism solenoid fixed to the cabinet 10A side as an actuator element, It is a thing of the structure which latches the lock hardware 17a which protruded on the right end section of the door 17 according to each towards the inside side of the cabinet 10A, and the lock hardware 10a which protruded on the right end section of each collection-and-delivery doors 30A, 30B, and 30C with the moving rod of an electromagnetism solenoid, respectively.

[0025]It can connect with the electronic control 20 according to the electrical transmission course of each storage room R1 -- in which the electronic lock K2 of electronic lock K1 -- and the collection-and-delivery doors 30A, 30B, and 30C is independent respectively, therefore unlocking operation can be carried out individually (drawing 4). The electronic control 20 is provided with the external connection port 21 which is provided with CPU which consists of various kinds of memory elements and operational elements, and outputs and inputs electronic intelligence. Three temperature sensor S1 -- which distributes this electronic control 20 in [ other than electronic lock K1 and K2 ] the cabinet 10A, and the cooler style 40 stored in the machinery room R37 are connected. Three temperature sensor S1 -- is inputted into the electronic control 20 on Orr conditions, and the control signal based on the signal from temperature sensor S1 -- is given to the cooler style 40. Namely, each storage room R1 -- which feedback control of the cooler style 40 is carried out, and has individual door 17 -- and the storage room R1 which has the collection-and-delivery doors 30A, 30B, and 30C -- Temperature control of the group (A group, B group, C group) is carried out via the electronic control 20.

[0026]The directions to the electronic control 20 can be performed from the navigational panel 22, and the electronic lock K1, unlocking operation of K2, and temperature setting in the cabinet 10A can be carried out via the navigational panel 22. The touch panel [ the navigational panel 22 ] 22a which can operate the interactive mode, When real-time settlement is carried out with the card reader 22b which reads a magnetic card or an IC card, the prepaid card slot 22e, and a prepaid card, the receipt printer 22d which issues a receipt, and the on-line telephone 22c which enables the telephone call with a specific connection destination are equipped. The touch panel 22a can display several sorts of screens which change one by one by button grabbing chosen with the interactive mode. For example, they are an arrival-of-goods display screen of an ordered commodity, a password input screen, a dispatch request screen to an article delivery trader, a dispatch load custody screen to an article delivery trader, etc.

[0027]Such an unmanned receipt box 10 can complete delivery and collection service for a short time and easily, without spoiling the convenience to each user. However, the unmanned receipt box 10 explained here is a cooperative use type (apartment type) with which the specific user and the specific storage room do not correspond fixed. That is, as usual, by an arrival-of-goods display screen, each user can recognize arrival of an ordered commodity etc., can unlock the electronic lock K1 of the individual door 17 of the storage room where the ordered commodity is stored according to the procedure displayed on the touch panel 22a, and can perform receipt of goods, and a dispatch request of a load. As a setting position of such an unmanned receipt box 10, the entrance of large stores, such as a wicket of a station and a supermarket, etc. can be considered, and it will be expected in the future that a specific user will tend to use after the time of going home or closing of a store.

[0028]On the other hand, with a dispatch load custody screen, when it can be recognized whether there is any dispatch request load and there is a dispatch request load, the article delivery trader can unlock the electronic lock K2 of the collection-and-delivery door 30B of B group with which the storage room R7 belongs, for example, it is stored, and can collect the cargo of a dispatch request load. Under the present circumstances, storage room R7 of B group -- When the dispatch request load of R21 is plurality, the cargo of these can be collected simultaneously. As long as it is the number of a delivered commodity after collection-of-cargo work, it is the storage room R7 of B group. -- All the vacant rooms of R21 can use as a space of a delivered commodity which can be stored. And storage room R7 of each [ be / the unlocking operation which these collection-and-delivery work takes / only the electronic lock K2 of the collection-and-delivery door of B group ] -- The number of operation hands and time which delivery and collection service takes individual door 17 -- of R21 as compared with the case where unlocking operation is carried out individually can be saved substantially. And, without adding change to the outside and size in the unmanned receipt box 10 according to this embodiment, that is, -- without it weights the conditions on installation of the unmanned receipt box 10 -- a group -- delivery and collection service and collection-of-cargo business can be completed easily in a short time by forming the door device only for the delivery and collection service which can open and close a storage room (A group, B group, C group) at once, and for collection-of-cargo business.

[0029]In using the external connection port 21 of the electronic control 20, Two or more unmanned receipt boxes

10 installed in the separate place from the one workstation 50 via the existing telephone line and digital information-and-telecommunications network of an analog — an information center etc. — concentrated control — central control can be carried out (drawing 5).

[0030]The example shown in the figure connects the workstation 50 to unmanned receipt box 10 — installed in three places via the digital information-and-telecommunications circuit, and, so to speak, is an example which builds an unmanned receipt box management system. The workstation 50 consists of the electronic control 51, the monitor 52, and on-line telephone 55 grade, and DSU53 of a simple substance and the terminal adopter 54 are attached to the electronic control 51. DSU23 of a terminal adopter integral type is attached to the electronic control 20 by the side of each unmanned receipt box 10. And the electronic control 51 and electronic-control 20 — are connected by the ISDN circuit via DSU 23 and 53. The on-line telephone 55 is connected via the terminal adopter 54.

[0031]In such a system configuration, while operating the electronic control 51 of the workstation 50 as a master electronic control, It will be possible to operate the electronic control 20 of each unmanned receipt box 10 as a remote electronic control, and, as a result, various kinds of operations which the user and article delivery trader of each unmanned receipt box 10 perform from the navigational panel 22 can be performed also from the workstation 50. For example, individual door 17 — The electronic lock K1 and electronic lock K2 of the collection-and-delivery doors 30A, 30B, and 30C — Unlocking operation, unmanned receipt box 10 — It is inner temperature control etc. The information inputted into each electronic control 20 and the information accumulated, Since it is sharable to the electronic-control 51 side, specification of the just recipient of a delivered commodity, a just article delivery trader's specification, etc. can be supervised from the workstation 50, and a security function can be improved. Since the question of the question on the notice of a claim to goods or navigational panel 22 operation, failure information, etc. can be performed on that spot by using the on-line telephones 22c and 55, a service function can also be improved.

[0032](A 2nd embodiment) The unmanned receipt box 10 of this embodiment is a thing of a gestalt provided with the collection-and-delivery door 30 which opens and closes storage room R1 — of total at a stretch (drawing 6).

[0033]The door frame 10D corresponds to storage room R1 — of the total formed in the cabinet 10A by consisting of the door frame 10D and much individual door 17 —, and the collection-and-delivery door 30 of this embodiment is [ therefore ] the storage room R1 in the door frame 30. — Individual door 17 — for total is attached. The collection-and-delivery door 30 equips the inner part of an upper bed edge with two or more hinges H3, and equips the inner part of a lower end edge with the electronic lock K3. That is, the collection-and-delivery door 30 bounds and the lower difference structure of a raising operation type is used for it.

[0034]The portion corresponding to the hinge H3 of the front end part of the top-plate panel 11 of the cabinet 10A and the collection-and-delivery door 30 is cut selectively, and is lacked, and the hinge accommodating case 11a is dropped into this portion. In the hinge accommodating case 11a, the axis 19 protrudes from the diaphragm 16b of the side, and the bracket 10d which has a boss is being fixed at the door frame 10D side. By letting the axis 19 pass to the boss of the bracket 10d, the collection-and-delivery door 30 is attached so that the front face of the cabinet 10A may be plugged up and it may hang down. The spring S1 is built into the axis 19 with the bracket 10d. The both ends of this spring S1 are supported by the rear face of the top-plate panel 11, and the stud 16B of the door frame 10D, and the spring S1 is energizing the collection-and-delivery door 30 to the direction which has bounded.

[0035]The electronic lock K3 of the collection-and-delivery door 30 comprises the lock hardware 10a which protrudes inside the lower end edge of the door frame 10D, the lock hardware 16f fixed to the cabinet 10A side, and an electromagnetism solenoid. The lock hardware 10a and 16f has a bore which is in agreement with a sliding direction, when the collection-and-delivery door 30 has closed, and the electronic lock K3 is structure locked when the moving rod P1 of an electromagnetism solenoid penetrates a congruous lock hardware [ 10a and 16f ] bore.

[0036]Such an unmanned receipt box 10 of a gestalt can open and close all the storage room R1 — only by the unlocking operation to the electronic lock K3 of a piece, and delivery and collection service can be carried out much more efficiently for an article delivery trader. Since the spring S1 which commits the collection-and-delivery door 30 to the direction which has bounded is built into each hinge H3, even if it is the large-sized collection-and-delivery door 30 of much storage room R1 — which attached the individual door 17, this can be opened and closed by a small operating physical force. Since the hinge H3 is located in the upper bed edge of the collection-and-delivery door 30, in Katasita who is seen in a right difference door or a left difference door, \*\*\*\*\* does not occur. However, such Katasita is all the storage rooms R1 by the right difference or the left difference, unless \*\*\*\*\* arises. — It may be made to open and close R36. As the spring S1, the thing loaded with a compression spring of

structure can also be used in an elastic pipe. In this case, in \*\*\*\*\* of an elastic pipe, it is got blocked, and in the position which the collection-and-delivery door 30 at the time of attaching to the collection-and-delivery door 30 had opened, since it is temporarily fixed after the collection-and-delivery door 30 has opened if it is considered as the thing with a locking mechanism once locked, it will become much more expedient for an article delivery trader. [0037]In the above explanation, although the electronic lock K2 and K3 are used for locking of the collection-and-delivery doors 30, 30A, 30B, and 30C, this may be a manual lock. Even if it is a manual lock, it is because it is possible to carry out locking safe enough for example, by adoption of the double keylock etc. which lock a keyhole. By this, even if the trouble on unlocking operation takes increase and this point into consideration a little, the merit on still larger delivery and collection service remains. Collection-and-delivery door 30 grade shall also be locked with the both sides of the electronic lock K2, and K3 and a manual lock. Also in this case, in addition, it is because the merit on delivery and collection service remains.

[0038]

[Effect of the Invention]The unmanned receipt box concerning this invention divides the inner space of a cabinet to many storage rooms for storing an article, Attach the individual door which should be attached to each divided storage room to each storage room via the door frame common to the group of two or more storage rooms, and by two or more individual doors attached to the door frame and the door frame. By forming the collection-and-delivery door which opens and closes two or more storage rooms belonging to the group corresponding to a door frame simultaneously, and attaching the electronic lock which carries out unlocking operation to this collection-and-delivery door from a manual lock or an electronic control, Since all the storage rooms belonging to the group corresponding to the collection-and-delivery door can be opened if unlocking operation of the manual lock or electronic lock of a collection-and-delivery door is carried out and a collection-and-delivery door is opened, it is possible to save substantially the trouble and the time required of the delivery and collection service of an article or collection-of-cargo business over an unmanned receipt box.

[0039]

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[Translation done.]